Vol. 2

BULLETINS
OF
AMERICAN PALEONTOLOGY

No. 8

NOTES ON EOCENE MOLLUSCA, WITH DESCRIPTIONS OF SOME NEW SPECIES

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March 5, 1897

Ithaca, N. Y.
U. S. A.

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INTRODUCTION.

This brief paper contains descriptions of a number of small species which the writer has had on hand for many years and now publishes at the suggestion of G. D. Harris. Notes on allied forms, and drawings of some species not heretofore adequately figured, are added. Dr. J. C. McConnell has furnished the illustrations.

NOTES AND REMARKS ON EOCENE SPECIES.

Heilprin's Species Published in 1880.

Angelo Heilprin described in the Proceedings of the National Museum, vol. 3, 1880, a number of new forms, the types of which are now in the Museum. Through the kindness of W. H. Dall, I have been able to borrow the originals, and have had them carefully redrawn. The following notes are added by Harris and myself.

Crassatella declivis, Pl. 3, figs. 1, a.

Syn. *C. declivis* Heilp., *l. c.*, p. 151, pl., fig. 9.

This and *C. capri-cranium* Rogers are now considered to be variations of *C. alæformis* Con., Jour. Acad. Nat. Sci., vol. vi, p. 228, pl. 10, fig. 1, 1830. Length, 1¾ inches.

The typical locality for *C. declivis* is Aquia creek, Va.

"Terebra" plicifera, Pl. 3, figs. 2, a.

Syn. *T. plicifera* Heilp., *l. c.*, p. 151, pl., fig. 8.

The drawing herewith given is of one of the type specimens in the U. S. National Museum. The locality given for these specimens is Atascosa county, Texas. They are somewhat friable, and from a blue clay matrix. Casts and imprints of this species were collected by members of the Texas Geological Survey on Peeler's ranch in Atascosa county. Although the aperture cannot now be determined beyond a doubt, it certainly indicates a close relationship with the Cerites. If it proves to be a *Cerithium* then the specific name must be changed, for it is preoccupied.

Levifusus pagoda, Pl. 3, fig. 3.

Syn. *Pleurotoma pagoda* Heilp., *l. c.*, p. 149, pl., fig. 1.
Fusus pagodiformis Heilp., Proc. Acad. Nat. Sci. Phila., 1880, p. 375.
Fusus pagodæformis Heilp., *Ibid.*, 1890, p. 395.
Levifusus pagoda var., Har., Bull. Amer. Paleont., vol. i, p. 207, pl. 19, fig. 8, 1896.

The reasons given by Harris for placing this species among the *Levifusi* may be found on p. 207 as cited above. A more elaborate discussion of the subject will be given in his forthcoming Bulletin on the Lignitic Stage.

Heilprin gives simply "Eocene of Alabama" for the horizon and locality of the type, the same figured herewith. It doubtless came from a Wood's Bluff outcrop. Length, 1½ inches.

"Fusus" marnochi, Pl. 3, figs. 4, a.

Syn. *F. marnochi* Heil., *l. c.*, p. 151, pl., fig. 6.

The type specimen in the National Museum still remains unique. Its generic position is extremely doubtful. The lines of growth shown by figure 4a correspond very closely to those of *Euthria*. Dall regards it as a *Pusionella*. When more and better specimens are obtained, its generic position can be more accurately determined. Length, four-fifths inch.

Locality.—TEXAS: Atascosa county.

Scala unilineata, Pl. 3, figs. 5, a.

Syn. *Scalaria unilineata* Heil., *l. c.*, p. 150, pl., fig. 5.

Described from Jackson, Miss. His specific name is preoccupied. Length, ¾ inch.

Eucheilodon creno-carinatus, Pl. 4, fig. 1.

Syn. *E. creno-carinata* Heilp., *l. c.*, p. 150, pl., fig. 4.
E. creno-carinata var., Har., Proc. Acad. Nat. Sci. Phila., 1896, p. 471, pl. 18, fig. 9.

This species is certainly quite variable in markings and may be equal to *E. reticulata* Gabb. Length of fragment, 1 inch.

Locality.—MISSISSIPPI: Jackson.

Surcula gabbi, (eroded specimen), Pl. 4, fig. 2.

Syn. *S. gabbi* Con., Amer. Jour. Conch., vol. i, p. 142, pl. 11, fig. 5, 1865.
Pleurotoma platysoma Heilp., *l. c.*, p. 150, pl., fig. 3.
S. gabbi Har., Proc. Acad. Nat. Sci. Phila., 1895, p. 56, pl. 4, fig. 5.

The reason for regarding *platysoma* as *S. gabbi* is that in working over many specimens of *gabbi* one finds eroded specimens indistinguishable from the form shown by figure 2. Heilprin gives as locality, Atascoca county, Tex., but precisely the same thing occurs at Smithville. Length, 2 inches?

Pleurotoma venusta, Pl. 4, fig. 3.

Syn. *P. venusta* Heilp., *l. c.*, p. 150, pl., fig. 2.

Locality, Jackson, Miss. Name is preoccupied, but the form has probably been described as *Pl. perexilis* Ald. Length, 1¼ inches.

Cornulina armigera, (young var.), Pl. 4, fig. 4.

Syn. ——— ——— Heilp., *l. c.*, pl., fig. 7.

Heilprin gives no locality nor name to his figure 7, the same specimen herewith figured. Specimens in the Texas State Survey collection from Atascosa county are similarly ornamented. In Harris' MS. report on the Eocene mollusca of Texas, 1893, we read, "The fact that these young specimens are without spines on the body whorl can scarcely be regarded as sufficient reason for referring them to a distinct species. The same remark applies to their slenderer form. Specimens have already been found that are intermediate between the varietal and the typical form.

"*Localities.*—Peeler's ranch; and S. E. of Campbellton, Atascosa county, Tex."

In Harris' forthcoming Bulletin on the Lignitic Stage many marked varieties of this species will be given. In the Texan report above referred to, a varietal name for the smooth form was proposed, *viz.*, var. *heilpriniana.*

Notes on Various Forms.

Mathilda regularis Meyer, Pl. 1, figs. 1a, b, c.

This specimen was obtained on the upper part of the bluff at Vicksburg, Miss. The type came from Red Bluff, Miss. This figure is much more accurate and complete than the original.

Solariorbis subangulatus Meyer, var., Pl. 4, fig. 8.

Shell small, depressed, whorls five, rapidly increasing in size; surface covered with fine revolving lines, umbilicus deep; aperture approaching quadrate, suture distinct.

This agrees with Meyer's description and figure. If new, however, it may be called *S. liniferus.* Type was obtained at Jackson, Miss.

Locality.—ALABAMA: Choctaw Corner, Wood's Bluff horizon.

Dosinia mercenaroidea, Pl. 1, figs. 10, a.

Syn. *Dosinia mercenaroidea* Ald., Jour. Cinn. Soc. Nat. Hist., 1887, p. 82.

Heretofore unfigured.

Locality.—ALABAMA: Base of Claiborne Bluff.

Fusus ottonis.

Syn. *Fusus meyeri* Ald., *non F. meyeri* Dunker.

Name being preoccupied is herewith changed.

Pleurotoma pulcherrima, Pl. 5, fig. 7.

Syn. *Conus pulcherrimus* Heilp., Proc. Acad. Nat. Sci. Phila., 1879, p. 213, pl. 13, fig. 8.

A much more perfect specimen than the type, is here figured. There is no doubt of its being a *Pleurotoma*.

Cylichna aldrichi, Pl. 4, fig. 5.

Syn. *Bulla biumbilicata* Meyer, *non B. biumbilicata* Desh.
B. (*Haminea*) *aldrichi* Langdon, Amer. Jour. Sci., vol. xxxi, 1886.

The specimen figured came from Choctaw Corner, Ala., where it is rather common.

M. Cossmann is in error in placing this shell under *Atys oviformis* Meyer, and evidently had not seen Langdon's description when he made his observations in "Notes Complémentaires," 1893, p. 50. In his "Revue Bibliographique pour l'Année," 1895, he has also united *Cylichna meyeri* Ald. with his *C. acrotoma*. They are not the same. A letter just received from M. Cossmann places *C. meyeri* in the subgenus *Acrostemma* of *Roxania*, and his species is called *Bullinella acrotoma*.

Tuba antiquata Con., Pl. 4, fig. 7.

Figure of a young shell from Choctaw Corner, Ala.

Scala octolineata Con., Pl. 4, figs. 6, a.

These specimens are from the same vicinity where Conrad is said to have obtained his shell. It is believed to be his species.

Locality.—Alabama: "The Rocks," Clark county.

Sportella gregorioi Coss., Pl. 5, fig. 4.

This form is figured because my specimen seems to be the opposite valve from the type figure.

Locality.—Alabama: Claiborne sand bed at W. Pugh's, Clark county.

The Genus *Ringicula* in American Eocene Deposits.

Several new species have lately been added to this genus from the Eocene, and the list now contains the following, a part of which are described in this paper.

Ringicula biplicata, Pl. 2, fig. 12.

Syn. *Marginella biplicata* Lea, Cont. to Geol., p. 201, pl. 6, fig. 216, 1833.
Ringicula biplicata Con., Check list, 1866, p. 9.
R. biplicata Con., Amer. Jour. Conch., 1865, p. 35.
R. biplicata DeGreg., Annales de Geol., 8e livr., p. 167, pl. 16, figs. 26-33, 1890.
R. biplicata var. *vilma* DeGreg., *Ibid.*, figs. 26-29.
R. biplicata var. *pita* DeGreg., *Ibid.*, figs. 30-31.
R. biplicata var. *leuca* DeGreg., *Ibid.*, figs. 32-33.
R. biplicata Coss., *Ibid.*, 12e livr., p. 50, 1893.

M. Cossmann correctly considers the varieties described by De Gregorio as different periods of growth of the same species. The figure given here is copied after O. Meyer's. The type specimen in the Academy of Natural Sciences, Philadelphia, has a broken spire. Described from the Claiborne sand bed, Claiborne, Ala.

Ringicula mississippiensis, Pl. 2, fig. 13.

Syn. *R. mississippiensis* Con., Proc. Acad. Nat. Sci. Phila., 1847, p. 287.
R. mississippiensis Con., Jour. Acad. Nat. Sci. Phila., 1848, p. 117, pl. 11, fig. 36.
R. (*Ringinella*) *mississippiensis* Con., Amer. Jour. Conch., 1865, p. 35.

The figure given here is copied after O. Meyer's and has been compared with the type. Described from Vicksburg, Miss.

Ringicula trapaquara, Pl. 2, fig. 7.

Syn. *R. trapaquara* Har., Proc. Acad. Nat. Sci. Phila., 1895, p. 53, pl. 3, fig. 7.

Described from Texas.

Ringicula butleriana, Pl. 2, fig. 14.

Syn. *R. butleriana* Ald., Bull. Amer. Paleont., vol. i, p. 57, pl. 2, fig. 8, 1896.

Described from Butler, Ala. Wood's Bluff horizon.

Ringicula dalli, Pl. 2, fig. 6.

Syn. *R. dalli* Clark, J. H. Univ. Cir., vol. xv, p. 4, 1895.
R. dalli Clark, Bull. U. S. Geol. Surv., No. 141, p. 64, pl. 9, figs. 3a, 3b, 1896.

Described from Woodstock, Va. Type figured here.

Ringicula lisbonensis, n. sp., Pl. 2, fig. 11.

This Bulletin.

Ringicula alabamensis n. sp., Pl. 2, figs. 8, a.
This Bulletin.

Ringicula butleriana var. **lignitifera** n. var., Pl. 2, fig. 9.
This Bulletin.

Ringicula claibornensis n. sp., Pl. 2, fig. 10.
This Bulletin.

DESCRIPTIONS OF NEW SPECIES.

Gastropoda.

RINGICULA.

Ringicula lisbonensis n. sp., Pl. 2, fig. 11.

Shell small; whorls five; surface marked with close-set spiral lines; aperture narrow, about half the length of the shell; outer lip smooth, terminating posteriorly on the body whorl before reaching the suture; the continuation around the posterior notch strongly developed till it reaches the centre of the inner lip; two strong plaits on the inner lip.

This little species is smaller than *R. biplicata* Lea. It has a smooth outer lip and the posterior canal to the aperture different from any other form known.

Locality.—ALABAMA: Lisbon.

Ringicula claibornensis n. sp., Pl. 2, fig. 10.

Shell small; whorls five; the first three nearly smooth, balance spirally striated; aperture narrow, rather long, but not reaching the suture; outer lip very strongly reflexed, smooth outside and and within; inner callus heavy, with a small erect tooth projecting from the posterior part; the anterior with two strong plaits angular to each other; anterior notch strongly developed.

This species is larger than *R. biplicata* Lea, and has no smooth band below the suture, the outer lip is smooth within, and much stouter than in the other form.

Locality.—ALABAMA: Claiborne sand bed, Claiborne.

Ringicula alabamensis n. sp., Pl. 2, figs. 8, a.

Shell small; spire blunt; whorls five, first two smooth, the others spirally striated; the striæ are exceedingly fine and closely set; aperture long and narrow, the border of the posterior notch reaching beyond the suture; outer lip reflexed and flattened, faintly striated anteriorly; inner callus strong posteriorly, with two moderate plaits very angular to each other.

This species is of medium size and is peculiar in having the longest aperture of any species known in our Eocene. The surface is much more finely marked than other forms. It approaches *R. trapaquara* Harris, but differs, as above stated, from it. It is much closer to *R. dalli* Clark, and while the plaits on the inner lip are more angular to each other, and the aperture a little longer, yet other specimens may be found to unite the two forms.

Locality.—ALABAMA: Matthews' Landing.

Ringicula butleriana var. **lignitifera** n. var., Pl. 2, fig. 9.

Shell medium, rather wide; inner lip striated within; callus strong, bearing posteriorly a small erect tooth, anteriorly with two strong plaits.

This form is placed here provisionally; more examples may justify its erection into a new species. None of many examples of *R. butleriana* Ald. show the striated outer lip. A single example resembling this variety was obtained at Nanafalia, Ala.

Locality.—ALABAMA: Bell's Landing (upper) bed.

PHILINE.

Philine alabamensis n. sp., Pl. 5, fig. 6.

Shell oval; whorls about one and a half, smooth and rudimentary at the apex, elsewhere covered with fine spiral lines which are finely zig-zag; outer whorl rising above the apex, constricted above, expanding rapidly below.

This is an exceedingly thin and delicate shell, the first of the genus to be found in our Eocene.

Locality.—ALABAMA: Wood's Bluff horizon at Choctaw Corner.

ACTÆON.

Actæon cossmanni n. sp., Pl. 2, fig. 5.

Shell slender; shining spire bluntly pointed; whorls seven, body whorl over half the length of the shell; suture impressed; surface ornamented with fine, close-set, impressed, spiral lines;

aperture oblong-ovate; outer lip simple; base of shell pointed and curved upwards; inner lip incurved, reflected in its anterior half, the spirals become coarser at the base of the shell and at their juction with the inner lip.

This species belongs to the section *Crenilabium* of Cossmann, and is especially distinguished from the other sections by the absence of a fold and by its pointed aperture at base.

Locality.—ALABAMA: Figured specimen from Gregg's Landing; also found in Wood's Bluff horizon at Choctaw Corner.

SCAPHANDER.

Scaphander ligniticus n. sp., Pl. 2, fig. 4.

Shell thin, cylindrical, narrowing posteriorly; outer lip rising above the shell; surface finely striated.

Differs from *S. alabamensis* Ald. in its being narrower posteriorly and longer, and from *S. primus* Ald. by its more regularly cylindrical shape. A specimen is in the National Museum, Washington.

Locality.—ALABAMA: Wood's Bluff horizon at Choctaw Corner.

CERITHIOPSIS.

This genus is represented in the Eocene by *C. nassula* Con. from the Claiborne sand bed; *C. langdoni* Ald. from Red Bluff, Miss., which form has been considered to equal the first named species. Both are *Lovenellæ*, but Conrad's species has only three tuberculated revolving lines, while the latter has five. Both shells are mature. The first named species has also been recorded from Newton, Miss. *C. aldrichi* Mr. belongs in the section *Metaxia* according to Prof. Dall. It is recorded from Red Bluff and Jackson, Miss., and Claiborne, Ala. *C. jacksonensis* Mr. is equal to *C. nassula* Con. according to Prof. Dall and seems to connect *C. langdoni* Ald. with it. *C. bicostellatum* Con. described as a *Cerithium* is a *Cerithiopsis*. It has not been figured. The following forms seem to be new.

Cerithiopsis dalli n. sp., Pl. 1, figs. 5, a.

Shell subcylindrical, ornamented with two rows of tubercles which are indented with two or three revolving impressed lines, and separated by two or three spirals, giving the whorls a constricted appearance in the centre; the tubercles are rather large; suture linear, impressed.

This form is quite distinct, but unfortunately the type and only specimen on hand has been crushed so that only a fragmentary description is possible. The large, coarse tubercles are quite peculiar and serve to distinguish the species from all others. That part of fig. 5a which shows the tubercles on a smooth surface has lost its outer layer.

Locality.—ALABAMA: Matthews' Landing.

Cerithiopsis conica n. sp., Pl. 1, fig. 4.

Shell small, slender, with four or five embryonic whorls which are longitudinally striate, the following ten whorls as in figure; sculpture consisting of three raised spirals equidistant on each whorl, crossed by numerous raised ribs which are nodular at the intersections; sutural area rather wide carrying in the bottom of the trough a smaller spiral which is nodulous; base smooth; canal short, strongly twisted.

Differs from all other forms by the peculiar corded spiral at the suture.

Localities.—ALABAMA: Baker's Bluff on Tombigbee river near St. Stephens; Claiborne sand horizon and White's marl bed, Monroe county.

Cerithiopsis fluviatilis n. sp., Pl. 1, fig. 3.

Shell small, with four or more embryonic whorls which are striated axially with fine wavy lines, followed by eight or ten whorls, these are ornamented with two raised spirals rather coarse, which are cut into nodules by the two spirals on that part of each whorl nearest the spire; bordering the base of each whorl is another spiral sometimes smooth as in figure or smooth on the body whorl and beaded strongly on the apical one, or in one example with three beaded spirals; suture strongly marked; base with two raised spirals near periphery, otherwise smooth, except almost microscopic lines of growth; canal strongly twisted.

Several specimens were found, all differing from each other in degree of ornamentation. The base of *C. nassula* appears to be smooth while this is not. The third or lower spiral line is farther from the middle one than it is from the upper one.

Looking down from the spire a beaded line appears on the lower side of the sutural area that does not appear in the side view.

Locality.—ALABAMA: Choctaw Corner.

CANCELLARIA.

Cancellaria marieana n. sp., Pl. 1, fig. 6.

Shell small, rather narrow and elongate; whorls six, rounded, three nuclear and three adult, adult whorls shouldered, cancellated; aperture ovate below, more pointed above; labrum crenulated in old specimens; pillar lip with two folds; shell umbilicated.

Rather common; differs from all others by its graceful shape and small size when adult.

Locality.—ALABAMA: Wood's Bluff horizon, Choctaw Corner.

ODONTOSTOMIA.

Odontostomia insignifica n. sp., Pl. 1, fig. 8.

Shell small, robust; surface smooth; whorls five; outer lip striate internally; inner lip with a strong plait nearly horizontal in front and expanded into a callus to base of shell.

Locality.—ALABAMA: Gregg's Landing.

VOLVARIA.

Volvaria (Volvariella) alabamensis n. sp., Pl. 2, fig. 3.

Shell small, thin, cylindrical; whorls five, three embryonic and smooth, the others covered with numerous, close-set, spiral, impressed lines; aperture long and narrow, over two-thirds the length of shell; outer lip smooth within except at the edge where the spiral lines show through; inner lip with two oblique basal folds which are continued to the end by a callus.

Only two specimens obtained.

Locality.—ALABAMA: Wood's Bluff horizon, Choctaw Corner.

CERITHIUM.

Cerithium delicatulum n. sp., Pl. 1, fig. 9.

Shell as in figure, rather slender, elongate; whorls covered with numerous, coarse, axial ribs crossed by three spiral ones, nodular at the intersections; suture deeply impressed, bounded by a row of close-set, rounded tubercles, above by a compressed, angular space which is marked by three spiral lines.

The specimen figured is quite imperfect but sufficiently characteristic to be distinguished.

Locality.—ALABAMA: Upper bed, Hatchetigbee bluff.

SCALA.

Scala exquisita n. sp., Pl. 1, figs. 7, a.

Shell elongate, umbilicate, with about ten whorls, the nuclear ones smooth, balance with fifteen elevated, recurved varices; body of whorl covered with fine spiral striæ between the varices and on the outer part of the same; the varices are pointed above, and join at the umbilicus making a rather sharp ridge, some of them continuing over into the interior of same; aperture round.

Locality.—ALABAMA: Gregg's Landing.

TUBA.

Tuba (Mathilda) leana n. sp., Pl. 1, fig. 2.

Shell small; whorls rounded, four in number, excluding spire; nucleus twisted, blunt, erect, rather large and bulbous; surface cancellated, with five or six spirals crossed with axial lines, the spirals just below suture smaller than the others; suture strongly marked; aperture rounded, smooth within; pillar lip thick, spreading slightly at base.

This shell has some resemblance to *Eglesia pulchra* Mr. from Claiborne. The drawing shows the aperture of an immature specimen. The nucleus does not lean to one side as in *Mathilda*,

Locality.—ALABAMA: Wood's Bluff horizon, Choctaw Corner.

FUSUS.

Fusus subfilosus n. sp., Pl. 2, fig. 2.

Shell as in figure; whorls eight or nine, seven adult, strongly rounded, acute at periphery; surface covered with numerous fine spirals crossed by lines of growth, some three or four spirals on base of body whorl stronger than the others; outer lip sharp; canal long, slightly twisted; inner lip smooth; aperture a little more rounded above than shown in figure.

Very rare, only one perfect specimen found.

Locality.—ALABAMA: Claiborne.

VOLUTILITHES.

Volutilithes lisbonensis n. sp., Pl. 2, figs. 1, a.

Shell as in figure; whorls eight, the first three forming the nucleus which is smooth, the periphery of remaining whorls ornamented with rather sharp spines, body whorl with eleven ribs, spaces between shining and smooth, though very fine lines of growth are present; shell shouldered above the spines and ornamented with three spiral lines, also slightly spinous, directly above the others; suture distinct; aperture nearly two-thirds the length of the shell; columella with two large plaits, with a small one between; outer lip lirate within; basal part of body whorl closely covered with fine spirals partly impressed and partly raised.

This species resembles in general outline *V. percursor* Dall, but that species has no shoulder spines and its ribs are flattened. This form is related to *V. petrosus* Con., but is much more slender, smoother, has stronger ribs and more whorls.

Locality.—ALABAMA: Lisbon bed, Alabama river.

Pelecypoda.

LUCINA.

Lucina astartiformis n. sp., Pl. 5, figs. 1, a.

Shell small, rather solid; beak pointed and small; surface with numerous concentric raised laminæ which nearly overlap at ventral margin; between the striæ are fine radiating lines from beak to margin; striæ terminating at hinge line in raised points; hinge long and narrow; anterior of shell concave along the hinge line; escutcheon smooth; cardinal teeth separated by a deep quadrangular fosset; no laterals; muscular impressions distinct; pallial line simple; posterior part of valves somewhat flattened; margin smooth.

This species is doubtfully placed in *Lucina.*

Locality.—ALABAMA: Choctaw Corner.

KELLIA.

Kellia prima n. sp., Pl. 5, figs. 3, a.

Shell small, oblong-ovate; both posterior and anterior angulated and covered with strong folds radiating from beak to margin; substance of shell thin; surface with very fine microscopic punctures; cardinal teeth erect, with deep pit between; lateral tooth small, short, curved, a triangular fosset between it and the cardinal teeth, the end of the lateral projecting beyond the hinge plate; muscular scars moderate; pallial line simple; margin smooth.

Rare. It resembles *K. eocænica* de Rainc from the Paris basin, but has a different dentition.

Locality.—ALABAMA: Choctaw Corner.

FABELLA.

Fabella oblonga n. sp., Pl. 5, figs. 2, a.

Shell small, oblong; beaks pointed, nearly central; surface smooth except for a few lines of growth; ventral margin smooth; cardinal teeth inclined, a triangular fosset between; pallial line simple; cicatrices about equal, moderate; hinge plate flattened.

Locality.—ALABAMA: Choctaw Corner.

SCINTILLA.

Scintilla clarkeana n. sp., Pl. 5, fig. 8.

Shell as in figure; nearly equilateral; surface smooth and shining; cardinal tooth erect; no laterals; pallial line simple; cicatrices slightly impressed; ligament internal.

Locality.—ALABAMA: Choctaw Corner.

LEDA.

Leda marieana n. sp., Pl. 5, fig. 5.

Shell elongate; surface smooth anteriorly, concentrically striated in middle area of surface of shell, smooth again posteriorly; umbonal ridge sharply defined.

The specimen figured is a young shell but appears to be quite distinct.

Locality.—ALABAMA: Choctaw Corner.

LEPTON.

Lepton? alabamensis n. sp., Pl. 5, fig. 9.

Shell small, thin, oval, sides nearly parallel, giving the shell a quadrangular shape; surface smooth; cicatrices moderate, slightly impressed; pallial line simple; a small cardinal tooth slightly inclined with fosset on left side of same; no laterals.

This shell resembles in form the genus *Lepton*, but having no laterals its place is only provisional.

Localities.—ALABAMA: Baker's Bluff; Claiborne sand bed.

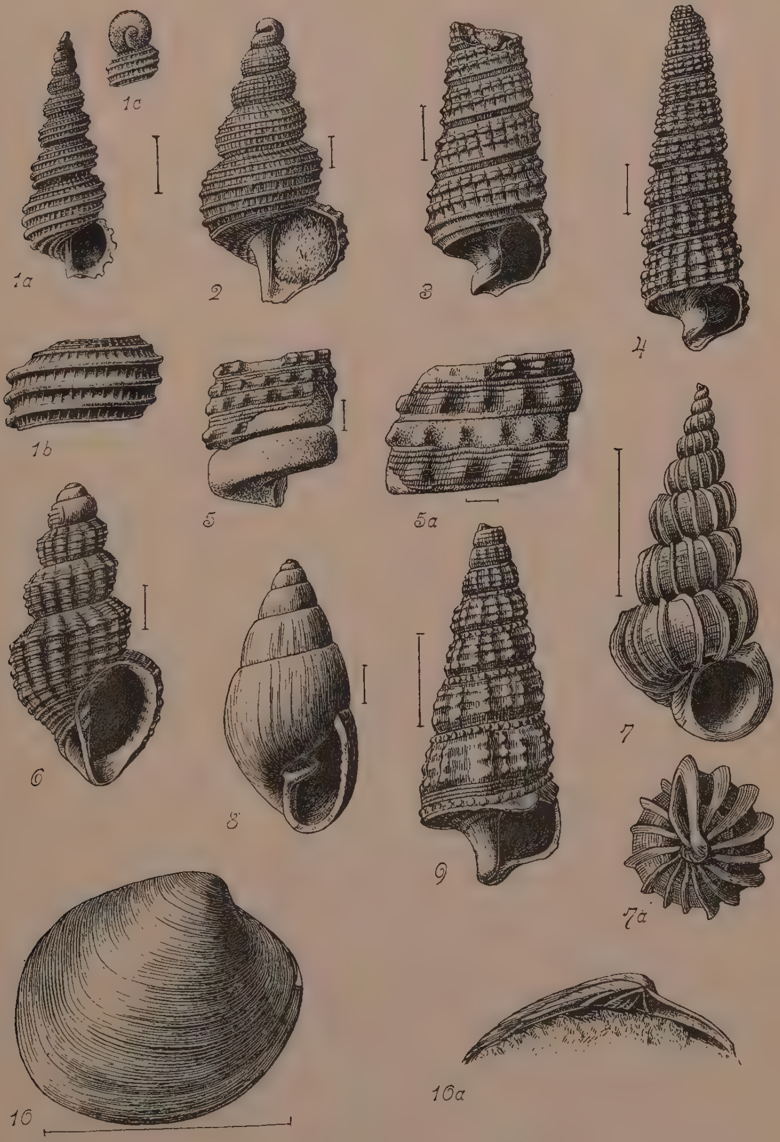
(Plate 1).

Plate 2.

EXPLANATION OF PLATE I.

(2)

Fig.		Page.
Fig. 1a.	*Mathilda regularis* Meyer	6, **172.**
b.	Showing spire.	
c.	Enlarged view of sculpture.	
2.	*Tuba (Mathilda) leana* n. sp.	14, **180.**
3.	*Cerithiopsis fluviatilis* n. sp.	12, **178.**
4.	*Cerithiopsis conica* n. sp.	" "
5.	*Cerithiopsis dalli* n. sp.	11, **177.**
a.	" "	
6.	*Cancellaria marieana* n. sp.	13, **179.**
7.	*Scala exquisita* n. sp.	14, **180.**
a.	Showing base.	
8.	*Odontostomia insignifica* n. sp.	13, **179.**
9.	*Cerithium delicatulum* n. sp.	" "
10.	*Dosinia mercenaroides* Ald.	6, **172.**
a.	Showing hinge.	


1c
1a
2
3
4
1b
5
5a
6
8
9
7
7a
10
10a

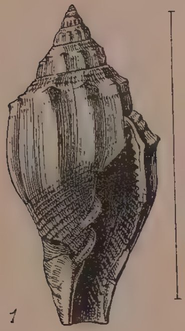
(Plate 2).

Plate 3.

Explanation of Plate 2.

(3)

		Page.
Fig. 1.	*Volutilithes lisbonensis* n. sp.	14, **180.**
a.	“ “	
2.	*Fusus subfilosus* n. sp.	“ “
3.	*Volvarin* (*Volvariella*) *alabamensis* n. sp.	13, **179.**
4.	*Scaphander ligniticus* n. sp.	11, **177.**
5.	*Actæon cossmanni* n. sp.	10, **176.**
6.	*Ringicula dalli* Clark	8, **174.**
7.	*Ringicula trapaquara* Harris	“ “
8.	*Ringicula alabamensis* n. sp.	9, **175.**
a.	“ “	
9.	*Ringicula butleriana* var. *lignitifera* n. var.	10, **176.**
10.	*Ringicula claibornensis* n. sp.	9, **175.**
11.	*Ringicula lisbonensis* n. sp.	“ “
12.	*Ringicula biplicata* Lea	8, **174.**
13.	*Ringicula mississippiensis* Con.	“ “
14.	*Ringicula butleriana* Ald.	“ “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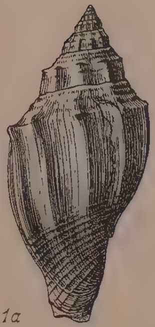
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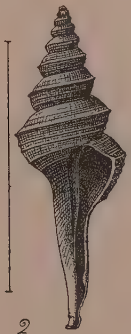
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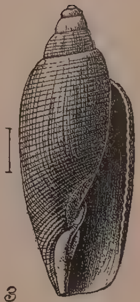
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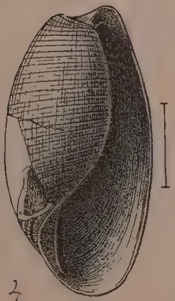
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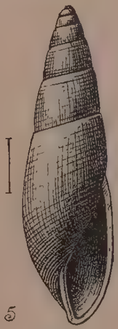
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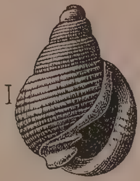
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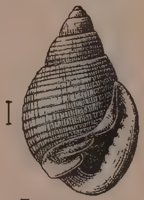
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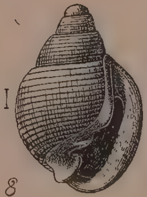
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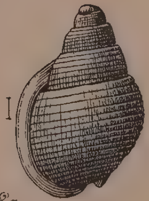
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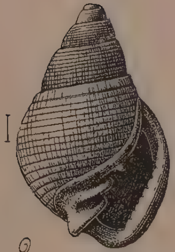
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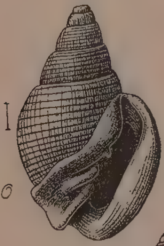
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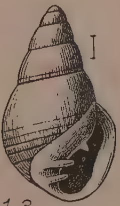
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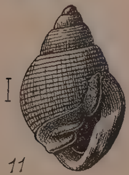
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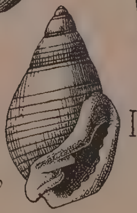
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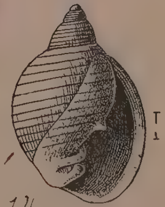
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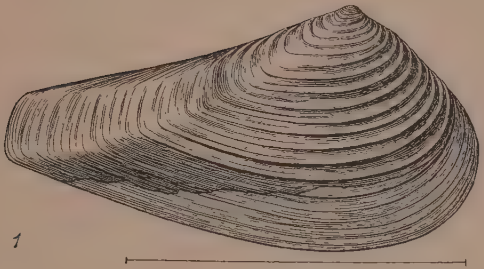
(Plate 3).
Plate 4.

EXPLANATION OF PLATE 3.

(**4**)

		Page.
Fig. 1.	*Crassatella declivis* Heilp.	4, **170.**
	a. " "	
2.	"*Terebra*" *plicifera* Heilp.	" "
	a. Enlarged view of aperture.	
3.	*Levifusus pagoda* Harris.	" "
4.	"*Fusus*" *marnochi* Heilp.	5, **171.**
	a. Enlarged to show lines of growth.	
5.	*Scala unilineata* Heilp.	" "
	a. Showing base.	



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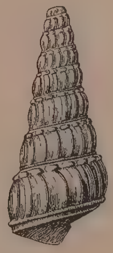

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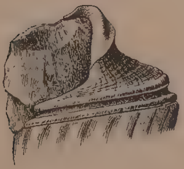

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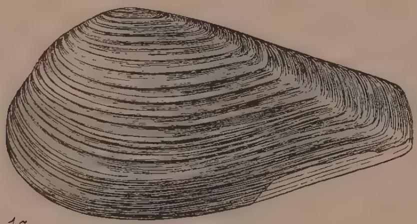

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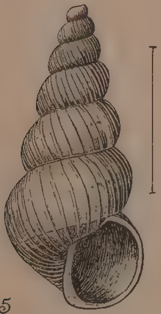

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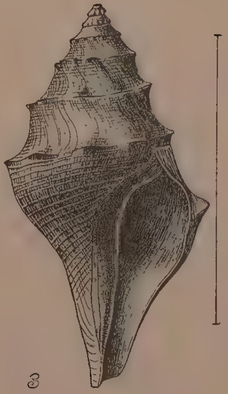

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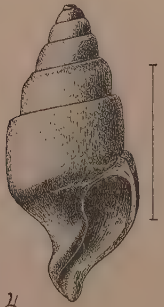

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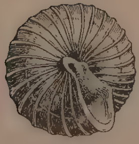

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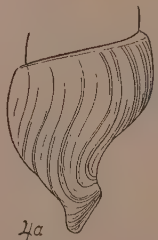

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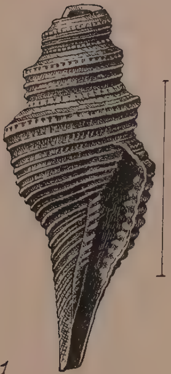
(Plate 4).

Plate 5.

EXPLANATION OF PLATE 4.

(**5**)

		Page.
Fig. 1.	*Eucheilodon creno-carinatus* Heilp.	5, **171.**
2.	*Surcula gabbi* Con. (eroded specimen)	" "
3.	*Pleurotoma venusta* Heilp.	" "
4.	*Cornulina armigera* Con. var.	6, **172.**
5.	*Cylichna aldrichi* Langdon	7, **173.**
6.	*Scala octolineata* Con.	" "
	a. Base of a second specimen.	
7.	*Tuba antiquata* Con. (young)	" "
8.	*Solariorbis subangulatus* Meyer, var.	6, **172.**



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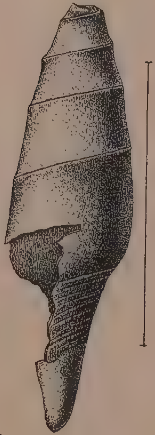

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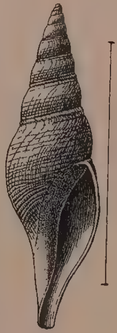

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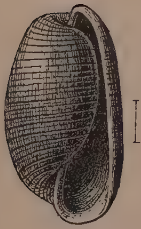

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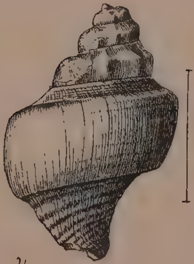

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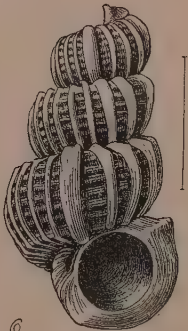

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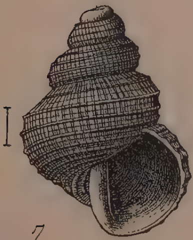

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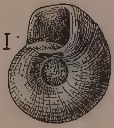

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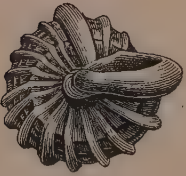


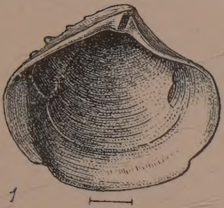
6a

(Piate 5).
Plate 6.

EXPLANATION OF PLATE 5.

(**6**)

		Page.
Fig. 1.	*Lucina astartiformis* n. sp.	15, **181.**
a.	“ “	
2.	*Fabella oblonga* n. sp.	16, **182.**
a.	“ “	
3.	*Kellia prima* n. sp.	15, **181.**
a.	“ “	
4.	*Sportella gregorioi* Coss.	7, **173.**
5.	*Leda marieana* n. sp.	16, **182.**
6.	*Philine alabamensis* n. sp.	10, **176.**
7.	*Pleurotoma pulcherrima* Heilp.	7, **173.**
8.	*Scintilla clarkeana* n. sp.	16, **182.**
9.	*Lepton? alabamensis* n. sp.	“ “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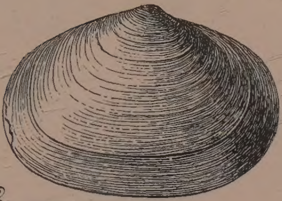
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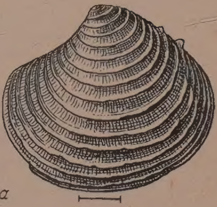
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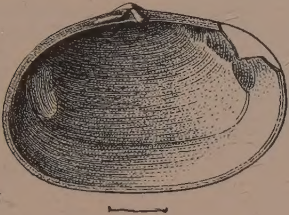
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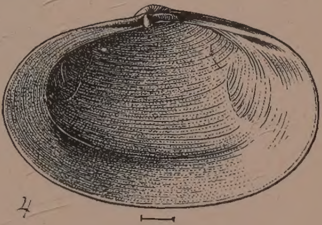
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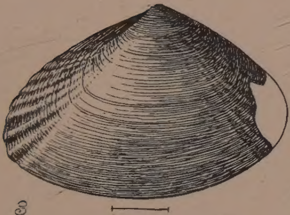
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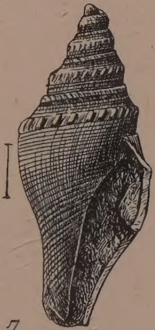
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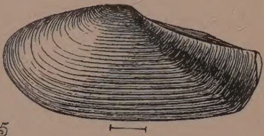
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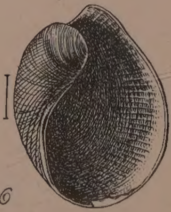
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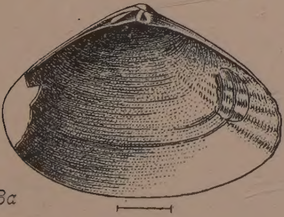
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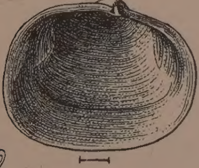
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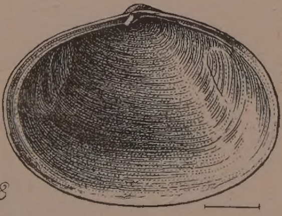
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